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PATENT & TRADEMARK

[008] Beinke, in U.S. Patent No. 6,404,351, teaches a system which not only notifies vehicles of impending emergency vehicles, but also has the ability to change traffic lights in a further effort to clear the roadways for emergency traffic. This may prove to be dangerous, as the connection to the traffic light may open a backdoor for hackers to gain access to such a system, which could cause accidents. Again this may prove to add an additional cost in producing the system, which will hinder the quick implementation into all vehicles. An alternate device, as disclosed in U.S. Patent No. 5,889,475, issued to Klosinski, transmits across a broadband ~~broad ban~~ of AM and FM frequencies to warn vehicles through existing radio devices. While this is advantageous due to the lack of necessity to add additional parts to vehicles it is impossible to assume the AM or FM transmission will reach all vehicles, for example those who do not listen to the radio, and prefer a compact disc player or no background noise in their automobile.

[016] FIGURES 2A, 2B depicts a method of manufacturing a system for notifying drivers of oncoming emergency vehicles according to the present invention~~;~~.

[018] Figures 1A and 1B depict~~s~~ a system for notifying drivers of emergency vehicles, where the term driver refers to the operator of a vehicle or any other means of transportation. The system intended to be onboard an emergency vehicle, such as an ambulance or a police or fire vehicle, comprises a transmitter 10, as shown in Figure 1A, having a microcontroller 12, a non-volatile memory 14 and a logic interface 16 for sending and receiving external signals. The system also includes a radio frequency (RF) generating means, as depicted by the RF amplifier/generator 18, a radio antenna system and switching means as depicted by the antenna 20 and element switching means 26 and a power regulation and filtering means 22 are also in electrical communication with the transmitter 10. The power regulation and filtering means 22 is connected to a power supply 28 which in a preferred embodiment may be an internal or external power supply or battery. An external trigger 24 is connected to the transmitter 10 and triggering this device will cause microcontroller 12 to activate RF generating means, as depicted by the RF amplifier/generator 18, and send data for modulation and transmission. The second major part of the system, as shown in Figure 1B, is the receiver 30, having a microcontroller 32, a non-volatile memory 34, and a logic interface 36 for sending and receiving external signals. This device is not limited to solely civilian vehicles as an emergency vehicle would also be interested in the presence of another oncoming emergency vehicle. This receiver also includes a RF receiving means 38, and a power regulation and filtering means 40 also in electrical communication with the receiver 30. The power regulation and filtering means 40 is connected to an internal or external power supply 42. In an alternate embodiment this receiver may be connected to an on-board computer system.

[019] A preferred embodiment may store a vehicle type code and unique serial number in the non-volatile memory 14 of the transmitter 10 and non-volatile memory 34 of the receiver 30. This vehicle type code is selected from the following group consisting of police vehicles, fire department vehicles, emergency medical units, passenger vehicles, motorcycles, sport utility vehicles, trucks, mopeds or commercial vehicles. Alternatively as depicted in Figure 1C the transmitter's ~~transceiver's~~ 50 logic interface 56 determines the speed of the emergency vehicle using a speed monitor 58. In response to input from the speed monitor 58, the microcontroller 52 provides a command to the RF generating means, as depicted by the RF amplifier/generator 60, to output the transmitted data in an omni-directional pattern at speeds under thirty miles per hour from the antenna 62. When the speed is determined to be greater than thirty miles per hour (MPH), another command is provided to the RF generating means, as depicted by the RF amplifier/generator 60, to output the transmitted data in a uni-directional pattern from the antenna 62. Yet another embodiment may provide between three and seven volts, ideally approximately five volts to the logic interface 56 of the transmitter 50 as shown by connection 68 to the power regulation and filtering means 64. The power and filtering means 64 also supplies between negative fifteen and fifteen volts, ideally approximately twelve volts to the RF generating means, as depicted by the RF amplifier/generator 60, by means of connection 70. As shown in Figure 1D, the power and filtering means 102 within the receiver 90 provides between negative fifteen and fifteen volts, ideally approximately twelve volts to the RF receiving means 100 through a connection such as a wire 108, and between three and seven volts, ideally five volts to the logic interface 96. Additionally the non-volatile memory 94 on the receiver 90 may store crash data which can be retrieved for use in accident analysis at a later date. It should be understood that the system may be in communication with any onboard computer or navigation system. An alternate embodiment includes a warning device 98 as depicted in Figure 1D, connected to the receiver's 90 logic interface 96. This warning device 98 can be an internal or external device selected from the group consisting of audio warning device, visual warning device, vibratory warning device, LED(s), buzzers, or lights with varying tone or flash pattern. This embodiment may vary the speed, brightness, vibratory notification speed or pattern of the warning device 98.